

## TECASINT 2031 black - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PI (Polyimide)

### Colour

anthracite

### Density

1.59 g/cm<sup>3</sup>

### Fillers

40% graphite

### Main features

- high thermal and mechanical capacity
- very good slide and wear properties
- very good thermal stability
- very high creep resistant
- good wear resistance
- low thermal expansion
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

### Target Industries

- automotive industry
- aircraft and aerospace technology
- cryogenic engineering
- conveyor technology
- hot glass technology
- mechanical engineering
- precision engineering

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	52	MPa	DIN EN ISO 527-1	(1) eU (2) eA (3) Ensinger Standard
Modulus of elasticity (tensile test)	1 mm/min	5100	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	1.8	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	87	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	4800	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	2.0	%	DIN EN ISO 178	
Compression strength	10 mm/min	125	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain	120	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	12.5	%	EN ISO 604	
Compression modulus	1 mm/min	1800	MPa	EN ISO 604	
Impact strength (Charpy)	max 7.5 J	14.2	kJ/m <sup>2</sup>	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J	3.3	kJ/m <sup>2</sup>	DIN EN ISO 179-1	2)
Shore hardness	Shore D	82		-	3)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		355	°C	-	1)
Heat distortion temperature	1.8 MPa	325	°C	DIN 53 461	(1) DMA, maximum loss factor tan d (2) Thermal expansion XY/Z axis (3) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	50-200°C	3.0 /	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	2)
Thermal expansion (CLTE)	200-300°C	3.8 /	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	3)
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	1.2	%	DIN EN ISO 62	(1) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Water absorption	24 h in water, 80°C	2.2	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

→ TECASINT 2000 series show significant water uptake. Parts have to be pre-dried before fast heating to above 200 °C (drying process: 2 h per 3 mm wall thickness at 150 °C).

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